



PN60
POCKET PRINTER

User's Guide

DOS and Windows version

IMPORTANT SAFETY INSTRUCTIONS

1. Read all of these instructions and save them for later reference.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this product near water.
5. Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage to the product.
6. Slots and openings on the cabinet and the back or bottom are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, do not block or cover these openings. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your dealer or local power company.
8. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be walked on.
9. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating. Also, make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
10. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
11. Except as explained elsewhere in this manual, don't attempt to service this product yourself. Opening or removing those covers that are marked "Do Not Remove" may expose you to dangerous voltage points or other risks. Refer all servicing on those compartments to service personnel.
12. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - A. When the power cord or plug is damaged or frayed.
 - B. If liquid has been spilled into the product.
 - C. If the product has been exposed to rain or water.
 - D. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - E. If the product has been dropped or the cabinet has been damaged.
 - F. If the product exhibits a distinct change in performance, indicating a need for service.
13. Be sure to recycle or dispose of old batteries properly.

CITIZEN PN60 User's Guide

DOS and Windows version

Table of Contents

	Introduction	v	Chapter 2	Using the Control Panel	9
	Where to Begin	vii		Online and Offline Modes	10
	Technical Support	viii		Performing Basic Operations	11
	Ordering Accessories and Supplies	viii	Chapter 3	Setting Up Your Software	13
Chapter 1	Setting Up the Printer	1		Installing the Microsoft Windows 3.1	
	Printer Components	2		Printer Driver	14
	Connecting Your Computer	3		Selecting a Printer Driver	16
	Connecting the Power Adapter	4	Chapter 4	Using Paper	19
	Loading Paper	6		Types of Paper	19
	Installing the Print Cartridge	8		Clearing Paper Jams	21
				Adjusting the Paper Position	22
				Unprintable Area	22
Chapter 5	Using Print Cartridges	23			
	Replacing the Print Cartridge	24	Appendix B	Troubleshooting	51
	Printing in Color	25	Appendix C	Specifications	63
	Extending Cartridge Life	27			
Chapter 6	Changing Printer Settings	29		Index	73
	Adjusting Print Darkness	29			
	Selecting a Font	30			
	Adjusting the Top Margin	31			
	Using the VuePrint Menu System	32			
Appendix A	Options	41			
	Battery	42			
	Color Print Cartridge	47			
	PN60 Connectivity Kits	47			
	Car Power Adapter	50			
	Ordering Accessories and Supplies	50			

Table of Contents

Chapter 1: Getting Started 15

Chapter 2: Using the Control Panel 25

Chapter 3: Setting Up Your Software 35

Chapter 4: Troubleshooting 45

Chapter 1: Getting Started 15

Chapter 2: Using the Control Panel 25

Chapter 3: Setting Up Your Software 35

Chapter 4: Troubleshooting 45

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Introduction

"Pocket-sized, powerful performance; the Citizen PN60 is the smallest printer in the world!"

The Citizen PN60 Pocket Printer is a laser quality portable printer which is the newest of the Citizen family of portable printers. Designed for portable and palmtop computers, the PN60 prints on a wide variety of plain papers, envelopes, labels, transparencies and more! A built-in single sheet feeder makes printing on the road or at your desk a snap.

Weighing just one pound without the optional battery (and only 1.5 pounds with the battery), the Citizen PN60 is precision-sized and easy to

use, quietly producing laser quality output at a fast-paced two pages per minute. It has a versatile international power adapter which lets you print all over the world!

You'll find these impressive features available with your PN60:

- Professional, economical, laser-quality output, with 5 built-in fonts: Roman, Courier, Sans Serif, Script, and Orator. TrueType font support and 360-dpi graphics make your documents look good, and you look better.

- ❑ A versatile control panel makes producing professional-looking documents as easy as the push of a button.
- ❑ Connect the supplied printer cable to your Notebook or PC's printer port, install the driver software, and you're up and printing in minutes.
- ❑ The PN60 is fully compatible with virtually all MS-DOS and Windows application software, and a Citizen printer driver disk is included. The PN60 is also compatible with the Citizen GSX-series 24-wire printers, which provides universal software compatibility with industry-standard Epson and IBM emulations.
- ❑ The PN60 gives you the flexibility to print on plain paper, envelopes, labels, transparencies and more.
- ❑ The PN60 comes standard with an international power adapter. In addition, optional accessories such as an optional battery and a car power adapter increase your PN60's portability. This means the PN60 works anywhere you work—anywhere in the world!
- ❑ Color is available for printing transparencies and other media. Just insert a PN60 color cartridge to add impact and memorability to that important business presentation, meeting or report.

- 
- ❑ Graphics resolution as high as 360 x 360 dpi, with the capability to print a line of graphics in one pass (most printers print 360-dpi graphics in four passes), which means your graphics print faster and your print cartridge lasts longer.
 - ❑ With the optional Macintosh compatibility kit which includes a Mac printer cable and driver disk, the Citizen PN60 will work flawlessly with your Macintosh.
 - ❑ The PN60 comes with Citizen's pledge of quality—a two year warranty.

Where to Begin

If you're an experienced user, go right to the separate "6-Step Quick Start" that came with your PN60. Otherwise, the best place to start is with Chapter 1, "Setting Up the Printer." Then, continue with Chapter 2, "Using the Control Panel" and Chapter 3, "Setting Up Commercial Software." Everything you need to get started printing is in these three chapters.

Read the rest of the manual when you want more details on things such as paper options, changing print cartridges, and default printer settings.

Technical Support

For assistance with setup and operation beyond what your dealer can provide, please call Citizen Technical Support at (310) 453-0614 between the hours of 8:00 AM and 4:00 PM (PST) Monday through Friday.

Technical and service information, product specifications and more are also available from Citizen's electronic Bulletin Board System (BBS). Free access is available 24 hours a day at the following numbers (via modem): (310) 453-7564 (300/1200/2400, 8N1) or (310) 829-3740 (9600/14400, V.32bis, 8N1).

Ordering Accessories and Supplies

Accessories and supplies such as print cartridges are available through your local Citizen dealer. For added convenience, and for parts requirements when out of warranty, you may order these items from National Parts Depot at (800) 524-8338 between the hours of 8:00 AM and 7:00 PM (EST) Monday through Friday. In Canada, call C.N.S. Canada at (416) 338-3044 between the hours of 8:30 AM and 5:00 PM (EST) Monday through Friday. In Mexico, call City Data S.A. de C.V. at (91) (5) 264-3894 between the hours of 8:30 AM and 6:00 PM (Mexico City) Monday through Friday.

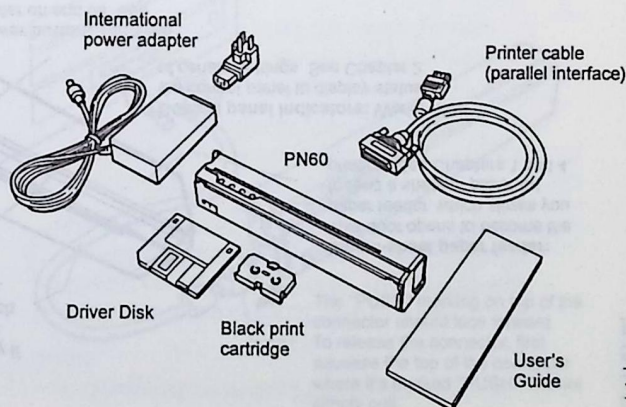
Chapter 1

Setting Up the Printer

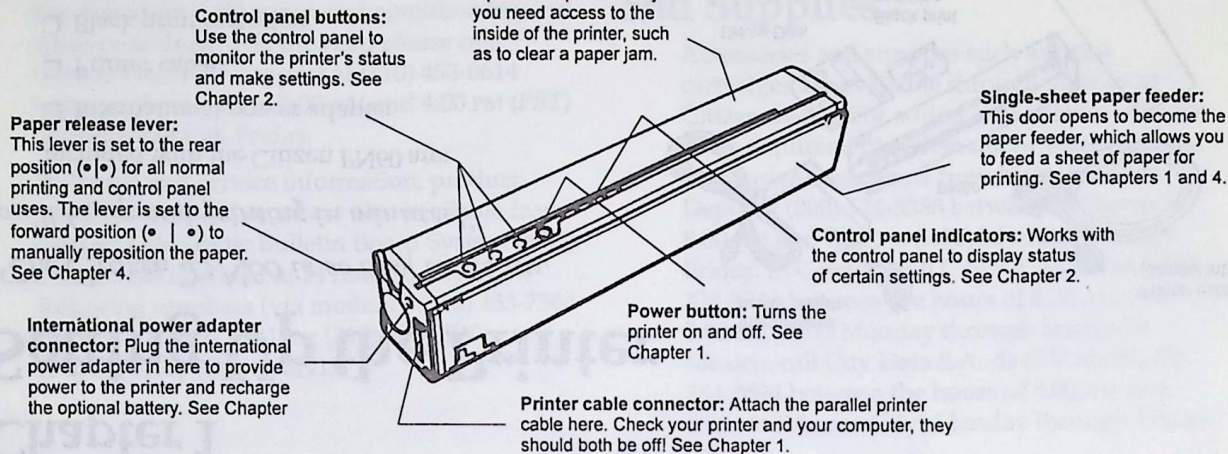
"The Citizen PN60 is so easy to set up, you'll be up and printing in minutes!"

Included with the Citizen PN60 are:

- ☐ International power adapter
- ☐ Printer cable
- ☐ Black print cartridge
- ☐ User's Guide with PN60 Pocket Printer Driver Disk



Printer Components

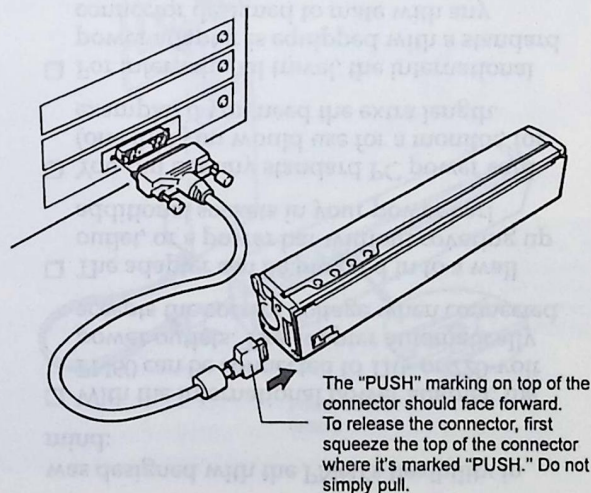


Connecting Your Computer

The printer cable furnished with your printer can be connected to either a portable or desktop computer. Its thin, hyperflexible wire is lightweight yet rugged, and its miniaturized connector accommodates the PN60's ultracompact design.

To connect the printer to your computer:

1. Turn off your printer and computer.
2. Attach the smaller end of the cable to the cable connector on the left end of your printer. The connector is keyed so it fits only one way. Be sure to push the cable connector all the way in.



3. Fit the other end of the cable onto the parallel port of your computer. Tighten the screws to prevent the cable from accidentally disconnecting.



Your PN60 can be used with your Macintosh or subnotebook/palmtop computer by connecting it with the appropriate optional accessories. Refer to Appendix A for more information.

Connecting the Power Adapter

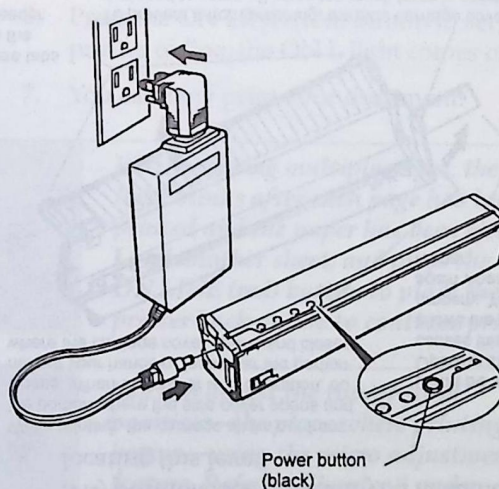
To use AC power (with or without a battery installed), you must use the international power adapter that comes with the PN60. This adapter

was designed with the PN60's flexibility in mind:

- ❑ With the international power adapter, the PN60 can be connected to 110- or 220-volt power outlets. The adapter automatically accepts the correct voltage when connected.
- ❑ The adapter can be plugged in to a wall outlet, or a power bar without covering up additional sockets in your power bar!
- ❑ You can use any standard PC power cord (one that you would use for a monitor, for example) if you need the extra length.
- ❑ For international travel, the international power adapter is equipped with a standard connector designed to mate with any available PC power cord at your new location.

To use the international power adapter:

1. Attach the adapter plug to the connector on the left side of the printer.
2. Insert the three-pronged plug or an appropriate PC power cord into the adapter. Plug the unit into a standard 110- or 220-volt power outlet, depending on your power requirements.
3. When you're ready to turn the printer on, press the POWER (black) button on the PN60's control panel.



Loading Paper

The PN60 feeds single sheets of paper using the convenient built-in single-sheet feeder. (For details on paper types and paper adjustment instructions, see Chapter 4.)

Follow these simple steps to load paper into the printer:

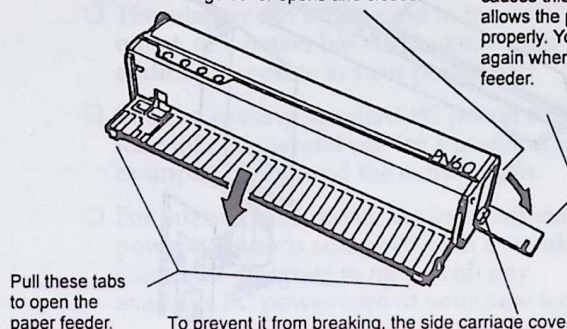
1. Open the single-sheet feeder, if it is closed, by pulling the tabs at the left and right corners as shown below. Lay the paper feeder completely down.
2. Turn on the printer; the ON L and PWR lights momentarily come on. Then the P.E. light blinks indicating "paper out." At this point, the printer is "offline" (the ON L light is off).

3. Be sure the paper release lever is in the rear (•|•) position. See page 2 if you need help locating this lever.

While printing, the carriage sticks out from the portion where the side cover opens and closes. When the printer is in operation, do not put your hands or face near the portion where the carriage cover opens and closes.

Don't be alarmed!

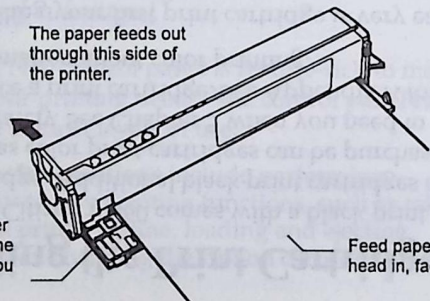
Opening the paper feeder causes this door to open, which allows the print cartridge to print properly. You can close the door again when you close the paper feeder.



4. Adjust the paper size guide on the left side of the paper feeder for the size of paper you are using, such as "LTR" for letter size.
5. Insert a sheet of paper. The sheet is fed into the printer. When the printer receives data, the paper stops at the TOF position. (TOF is the place where printing begins)

The paper feeds out through this side of the printer.

Adjust the paper size guide for the size of paper you are using



6. Press the ON LINE (red) button to set the printer online; the ON L light comes on.
7. You can now print your document.



When printing multiple pages, the P.E. light blinks after each page has been printed and the paper has been ejected. Load another sheet, and press the ON LINE (red) button to place the printer back online to continue printing.



You can adjust the top-of-form position—the place where printing begins—using the micro adjustment feature. Refer to Chapter 6 under "Adjusting the Top Margin" for details.

Installing the Print Cartridge

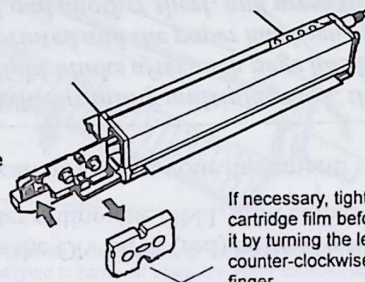
Your Citizen PN60 comes with a black print cartridge. Additional black print cartridges as well as color print cartridges can be purchased separately. See Chapter 5 when you need to replace a print cartridge. See Appendix A for information about color printing.

Installing your first print cartridge is very easy:

1. Turn the printer on. The R.E. light blinks.
2. Load paper (if you haven't already done so).
3. Press the RIBBON (blue) button for 2 to 3 seconds. The empty ribbon carriage comes out of the small door on the side of the printer.

4. Remove the print cartridge from its packaging. Set the cartridge down on the cartridge holder (it only fits one way) and snap it firmly into place. Properly installed, the cartridge will be flat and snug.
5. Press the ON LINE (red) button; the print cartridge moves back into the printer and the ON L light comes on.

If the cartridge doesn't eject all the way, you can pull it out far enough to change the cartridge without hurting anything.



If necessary, tighten the cartridge film before installing it by turning the left sprocket counter-clockwise with your finger.

Chapter 2

Using the Control Panel

"A versatile control panel makes producing professional-looking documents as easy as the push of a button!"

The PN60 control panel is feature-rich to meet all your printing needs. The control panel has three distinct levels of use:

- ❑ **Basic operations** include performing day-to-day printing functions, such as taking the printer offline, loading and ejecting paper, changing the ribbon cartridge, and

checking battery capacity and charging it. Basic operations are described in this chapter.

- ❑ **Quick selections** include "as needed" functions, such as selecting fonts and adjusting the print darkness. See Chapter 6 for details.

- ❑ **Advanced (VuePrint) operation** allows you to change various print settings as required in order to further customize your PN60. See Chapter 6 for details.

Online and Offline Modes

The PN60 control panel functions differently, depending on if it is online or offline. Taking the printer offline or setting it back online is done by pressing the ON LINE (red) button.

Online Mode

Online is the printer's "normal" mode (the ON L light is on). Your printer spends most of its time in this state because it is online

whenever printing. Set the printer online by pressing the ON LINE (red) button.

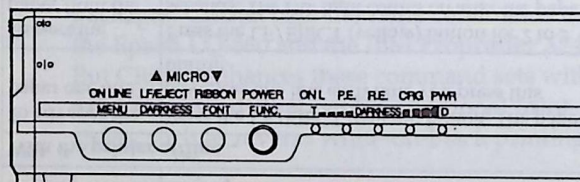
Certain circumstances can prohibit you from setting the printer online, including:

- ❑ When the printer is out of paper (the P.E. light blinks)
- ❑ When you experience a printer error (the ON L, P.E. and PWR lights blink)
- ❑ When the print cartridge is used up (the R.E. light blinks)
- ❑ When the printer has turned itself off to save battery energy

10

Offline Mode

Offline is the PN60's non-printing mode (the ON L light is off). Set the printer offline by pressing the ON LINE (red) button. You can perform several basic and advanced operations with the printer offline. Basic operations are described in this chapter; all other operations are described in Chapter 6.



Performing Basic Operations

This section describes the basic day-to-day printing functions you're likely to perform. The printer can be online or offline.

Basic operation	Description
With the printer online...	
To set the printer offline	Press the ON LINE (red) button. The ON L light goes out, indicating the printer is now offline.
To initialize the printer to its factory settings	Press the ON LINE (red), LF/EJECT (yellow) and RIBBON (blue) buttons for 2 to 3 seconds. The PWR light blinks. Turn the printer off and then on again to load these settings.
With the printer offline...	
To set the printer online	Press the ON LINE (red) button. The ON L light comes on, indicating the printer is now online.

11

Basic operation	Description
With the printer offline...	
To advance the paper one line	Press the LF/EJECT (yellow) button. The paper advances one line each time you press this button.
To eject the paper from the printer	Press the LF/EJECT (yellow) button for 2 to 3 seconds. The P.E. light comes on after the paper is ejected.
To clear the print buffer	Press the LF/EJECT (yellow) and RIBBON (blue) buttons for 2 to 3 seconds. The ON L and CRG lights blink.
To change the print cartridge	Press the RIBBON (blue) button; the carriage unit moves to the far right, exposing the print cartridge outside the printer. Replace the ribbon cartridge and press the RIBBON button again—or the ON LINE (red) button—to return the carriage unit to the inside of the printer.

Basic operation	Description
To check the battery capacity	With the international power adapter not connected, press the POWER (red) and LF/EJECT (yellow) buttons for 2 to 3 seconds. The five lights on the control panel indicate the remaining capacity (all five lights on indicates 80–100%).
To start a normal battery charge	With the international power adapter properly connected, press the POWER (red) and LF/EJECT (yellow) buttons for 2 to 3 seconds. The CRG light comes on. The CRG light goes out when the battery is charged.

Chapter 3

Setting Up Your Software

"The Citizen PN60 is fully compatible with virtually all DOS and Windows software."

The Citizen PN60 is designed to work easily with many popular commercial software packages. Citizen uses the same commands as the Epson LQ-860 and the IBM Proprinter X24E. But Citizen enhances these command sets with extra commands that permit additional print styles, such as reverse white-on-black printing.

This chapter explains:

- ☐ How to install a printer driver for use with Microsoft Windows 3.1
- ☐ How to select a printer driver for use with other applications

Installing the Microsoft Windows 3.1 Printer Driver

Microsoft Windows controls the printer when you print with Windows-based applications, so you don't need to install a separate driver for each application. To get maximum use of your printer's features, install the Citizen Windows 3.1 printer driver supplied on the PN60 Pocket Printer Driver Disk that came with your printer. Alternatively, you may install the Epson LQ-860 or IBM Proprinter X24e driver that came with your Windows package, but it won't allow you to use all of the great features the Citizen printer driver offers.



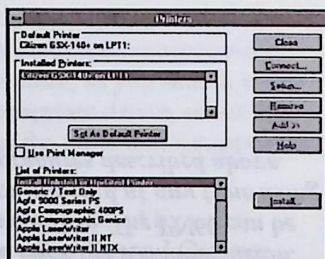
The Windows 3.1 driver for Citizen printers can be found on the PN60 Pocket Printer Driver Disk that came with your printer. Updated drivers as well as drivers for other software programs may also be available on the Citizen BBS. Refer to the "Service and Support Information" section in Appendix B for more information.

Follow these steps to install the Citizen printer driver:

1. While running Windows, open the Control Panel. (Its icon is in the Main group.)
2. Double-click the Printers icon. The Printers dialog box is displayed.

14

3. Click the Add button. The List of Printers is displayed.



4. Highlight "Install Unlisted or Updated Printer" and click the Install button. The Install Driver dialog box is displayed.
5. Insert the PN60 Driver Disk into the appropriate disk drive. Enter the drive name and path (for example, a:\windows) and click OK. The Add Unlisted or Updated Printer dialog box is displayed.

6. Select "Citizen PN60" and click OK. The PN60 printer driver will be installed and it appears in the list of Installed Printers in the Printers dialog box.
7. Make these additional changes as needed (otherwise, skip to step 8):
 - ☐ To make the PN60 the default printer (if you have more than one printer driver installed), highlight it and click the Set As Default Printer button.
 - ☐ If you need to change the printer port, click the Connect button and select the printer port where your PN60 is connected. Then click OK.

8. When you're finished, click the Close button. Then exit Control Panel.

You're ready to print!



If you ever want to remove the Citizen PN60 Windows driver, return to the Printers dialog box, highlight the printer name in the list of installed printers, and click the Remove button. Click OK to confirm. The PN60 can be reinstalled or updated at any time using the same procedures described above.

Selecting a Printer Driver

Printer drivers in your software are the most common method for sending commands to the printer. These drivers generally support the greatest number of features. You can also create your own printer driver, use embedded printer commands, or set up a group of commands that your software sends each time it starts to print.

When you install your software, you are usually asked to select a printer driver from a supplied list. It helps to know what features some of these drivers offer when you make your selection. The table on the following page lists a few of the most common features associated with the recommended printer drivers.

The printer models in this table are listed in order of their similarity to (i.e., compatibility with) the PN60. Therefore, as you search your software for the appropriate driver, select the first printer model in the table that's supported by your software.

If none of these drivers are listed by your software, choose any other Epson LQ-series printer because Citizen uses the same basic commands.

Driver (in order of compatibility)	Features	
	Color	360 x 360 dpi graphics
Citizen PN60	YES	YES (one pass)
Citizen Notebook Printer II	YES	YES (one pass)
Citizen PN48	NO	YES

Driver (in order of compatibility)	Features	
	Color	360 x 360 dpi graphics
Citizen GSX-230	YES	YES
Citizen GSX-140 PLUS	YES	YES
Citizen GSX-140	YES	YES
Epson LQ-860	YES	YES
Epson LQ-2550	YES	YES
Epson LQ-510	NO	YES
Epson LQ-850	NO	YES
Epson LQ-500	NO	NO
Epson LQ-2500	YES	NO
IBM Proprinter X24E	NO	NO
IBM Proprinter X24	NO	NO

Chapter 4

Using Paper

"The PN60 lets you print on plain paper, envelopes, labels, transparencies, and more."

The PN60's simple single-sheet feeder makes printing quick and easy in both portable and desktop printing. This chapter describes the different types of paper you can use, how to clear paper jams and how to make adjustments.

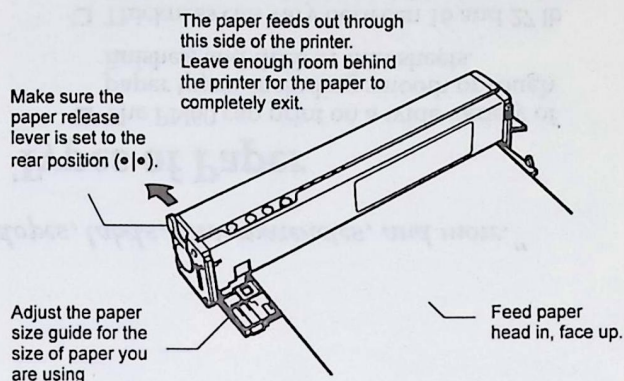
For complete instructions on loading paper, see "Loading Paper" in Chapter 1.

Types of Paper

- ☐ The PN60 can print on a wide variety of paper types, including smooth or rough finishes, and thick or thin sheets.
- ☐ Thickness can vary between 16 and 27 lb. Width can vary between 3.5 inches and 8.5 inches.

- ❑ You can use letterhead if it meets the guidelines above for weight and size.
- ❑ Although the PN60 will print on any plain paper, for best results, use a quality bond paper designed for laser printers, such as Weyerhaeuser First Choice or Hammermill Laser Print.
- ❑ Different types of paper accept ink differently, so you may want to change the print darkness setting to accommodate the paper you are using. You can do this using the darkness control mode selected on the PN60's control panel. See "Adjusting Print Darkness" in Chapter 6 for details.
- ❑ To keep the PN60 as small and lightweight as possible, it has been designed without a

tractor feeder. Consequently, continuous paper can not be used.



Transparencies

Overhead projector transparencies can be used with the PN60. For best results use high-quality transparencies designed for use in copiers and laser printers. Since the PN60 feeds transparencies straight through the printer, there is no curling.

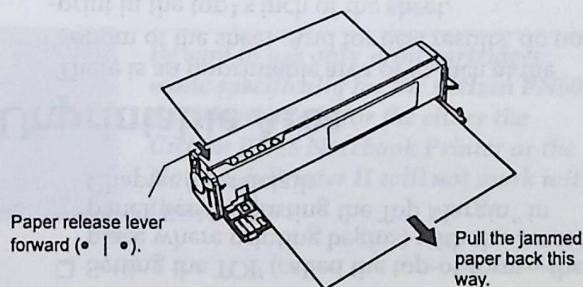
Envelopes and Labels

The PN60 can print on envelopes and labels if you follow these guidelines. To load an envelope, open the flap and insert the flap into the printer (face up). If the envelope won't advance properly, it may be too thick; try another type of envelope.

Clearing Paper Jams

To clear a paper jam, do the following:

1. Set the paper release lever to the forward position (● | ●).
2. Pull the sheet back out in the direction of the paper feeder as shown below.



3. Return the paper release lever to the rear position (•|•).

Adjusting the Paper Position

You can quickly adjust the paper position in several different ways, including:

- ❑ Advancing the paper one line at a time with the LF/EJECT (yellow) button on the control panel. See "Control Keys and Indicator Lights" in Chapter 2 for details.
- ❑ Ejecting a sheet of paper from the printer with the LF/EJECT (yellow) button on the control panel. See "Control Keys and Indicator Lights" in Chapter 2 for details.

- ❑ Setting the TOF (called the top-of-form—the place where printing begins) with the control panel. See "Adjusting the Top Margin" in Chapter 6 for details.

Unprintable Area

There is an unprintable area of 1/2 inch at the bottom of the sheet. And for best results, do not print in the top 1/5 inch of the sheet.

Chapter 5

Using Print Cartridges

"Professional, economical, laser quality output from premium-quality print cartridges. And unsurpassed optional color cartridges for color when you need it!"

The PN60 uses premium-quality disposable cartridges. When it's time to replace the cartridge, the used cartridge must be properly discarded. Optional color cartridges are also available for printing color images on transparencies and other media.



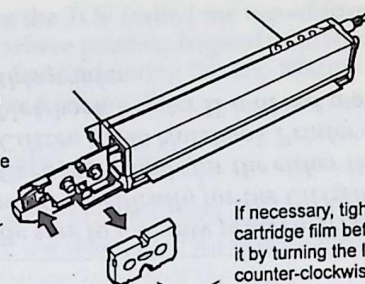
Be sure to use only print cartridges made specifically for the Citizen PN60. Cartridges made for either the Citizen PN48 Notebook Printer or the Notebook Printer II will not work with this printer.

Replacing the Print Cartridge

You will know it is time to replace the print cartridge when the R.E. light blinks. Follow these steps to replace either the black or color cartridge:

1. Press the RIBBON (blue) button for 2 to 3 seconds. The ribbon cartridge comes out of the small door on the side of the printer.
2. Press the yellow release lever to lift out the old cartridge.
3. Discard the used cartridge and remove a new one from its packaging. If you're going to print in color at this time, install a color cartridge.

If the cartridge doesn't eject all the way, you can pull it out far enough to change the cartridge without hurting anything.



If necessary, tighten the cartridge film before installing it by turning the left sprocket counter-clockwise with your finger.



When you dispose of an old cartridge, don't remove the film from the cartridge. The film is made of tough polyethylene that could cause injury.

24

4. Set the cartridge down on the cartridge holder (it only fits one way) and snap it firmly into place. Properly installed, the cartridge will be flat and snug.
5. Press the ON LINE (red) button; the print cartridge moves back into the printer and the ON L light comes on.



Different types of paper accept ink differently, so you may want to change the print darkness setting to accommodate the paper you are using. You can do this using the darkness control mode selected on the PN60's control panel. See "Adjusting Print Darkness" in Chapter 6 for details.

Printing in Color

The PN60 prints color images on transparencies and other media, adding impact and memorability to that important business presentation, meeting or report.

Printing in color can be accomplished by using a color print cartridge and installing it in place of your regular black print cartridge. You'll also need to tell your software program that you are using color.

Although color printing is not as economical as normal printing, and print speed is slower, the PN60 gives you the flexibility of having color "when you need it." We recommend that you use a black cartridge to print your rough drafts

25

that don't need to show color and save your color cartridge for the final output. This will reduce your color cartridge consumption and speed up your printing until you need that final copy.

The PN60 should not be used photorealistic applications that require color.

Installing the Color Cartridge

The color cartridge is installed exactly the same way as the standard black cartridge. Refer to the previous section in this chapter for details.

Controlling Color with Software

You can select colors using your commercial software—if it supports color printing. Refer to your software manual for details about how to do this.

You'll need to select a printer driver that supports color printing in your software program in order to print in color. Refer to the following table for the best choice. The printer models are listed in order of their similarity to (i.e., compatibility with) the PN60. Therefore, as you search your software for the appropriate driver, select the first printer model in the table that's supported by your software.

26

Driver (in order of compatibility)	Features	
	Color	360 x 360 dpi graphics
Citizen PN60	YES	YES (one pass)
Citizen Notebook Printer II	YES	YES (one pass)
Citizen GSX-230	YES	YES
Citizen GSX-140 PLUS	YES	YES
Citizen GSX-140	YES	YES
Epson LQ-860	YES	YES
Epson LQ-2550	YES	YES
Epson LQ-2500	YES	NO

example, the Citizen PN60 printer driver allows you to print graphics resolutions as high as 360 x 360 dpi in one pass (most printers print 360-dpi graphics in four passes) which means you use that much less print film in the cartridge.

- ❑ Be sure to store your cartridges where it's not too hot. Don't leave cartridges in your car trunk or exposed to direct sunlight, for example. Overheating diminishes the print quality and could even make your cartridge unusable.

Extending Cartridge Life

- ❑ If one is available, use the Citizen PN60 printer driver for better speed and most efficient use of the print cartridge. For

27

- ❑ Use color only when you need it for that special color image. Use the black print cartridge to proof rough drafts of your work. Then put the color print cartridge in for your finished work. This reduces unnecessary consumption of your color print cartridge.
- ❑ If you are using software that prints only selected items, use that option to print only the text or objects you want to see before printing the final copy.
- ❑ Even though the print cartridge contains a film-like substance, do not store the cartridge in a refrigerator (like you would photographic film); it will damage the cartridge.
- ❑ The PN60 uses logic-seeking printhead technology, which means the printhead moves directly to the first print position in the next line instead of returning to the left edge after every line. For fastest printing, remember this when laying out your page.
- ❑ Programmers should use absolute printhead movements to move to the next print position. A space is considered a printable character and causes the film in the print cartridge to advance and waste film.
- ❑ Experiment with space skipping on (or off) to extend cartridge life. This setting is made in the VuePrint menu. See Chapter 6 for details.

Chapter 6

Changing Printer Settings

"Changing printer settings is quick and easy with the PN60's unique control panel features."

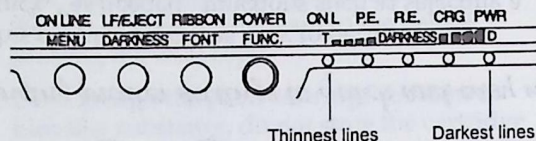
This chapter describes how to perform some quick, "as needed" functions such as selecting a font or adjusting the print darkness, and how to use Citizen's VuePrint menu to change the PN60's default settings.

See Chapter 2 for details about performing basic day-to-day printing functions.

Adjusting Print Darkness

Different types of paper accept ink differently, so you may want to change the print darkness setting to accommodate the paper you are using. You can do this by adjusting the darkness setting on the PN60's control panel. Follow these steps:

1. With the printer online, press the ON LINE (red) and POWER (black) buttons for 2 to 3 seconds. The ON L and PWR lights blink.
2. Press the DARKNESS (yellow) button for 2 to 3 seconds to activate the darkness control mode. The current darkness is shown by the light that is on.



3. Adjust the darkness setting by pressing the DARKNESS (yellow) button. Each time you press it, the bar position will move to the right (darker). When it reaches its darkest

setting, it will move to to the leftmost (lightest) position.

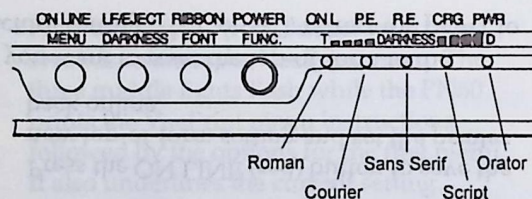
4. Press the FUNC. (black) button to save the current setting.
5. Press the ON LINE (red) button to set the printer online. The ON L light goes on.

Selecting a Font

You can quickly select any of the five available built-in fonts using the control panel.

1. With the printer online, press the ON LINE (red) and POWER (black) buttons for 2 to 3 seconds. The ON L and PWR lights blink.

30



2. Press and hold the FONT (blue) button for 2 to 3 seconds. The current font will be the light that is on.
3. Press the FONT (blue) button to choose the next font (and consequently, the next light). When you reach the last font, press the FONT button again to go back to the first one.

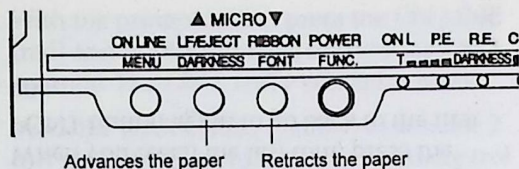
4. Press the FUNC. (black) button to permanently save the new font selection. The selection is saved, even if you turn the printer off.
5. Press the ON LINE (red) button to set the printer back online.

Adjusting the Top Margin

You can quickly adjust the top margin to accommodate different types of forms that need a fine adjustment of the first line of print.

1. With paper already loaded and the printer online, press the ▲ MICRO (yellow) button (or the ▼ MICRO (blue) button) for 2 to 3 seconds. The ON L and P.E. lights blink.

31



the minimum, then press the the ▼ MICRO (blue) button for 2 to 3 seconds. The paper will return to the factory setting.

Using the VuePrint Menu System

The VuePrint menu is Citizen's unique feature for viewing, adjusting, saving, and printing all the printer's default settings. It allows you to print the menu items on your PN60 while you make changes.

- Press the ▲ MICRO (yellow) button to advance the paper or the ▼ MICRO (blue) button to retract it. It moves in $\frac{1}{60}$ " increments from a minimum of $\frac{12}{60}$ " to a maximum of $\frac{72}{60}$ "; $\frac{20}{60}$ " is the default.
- Press the ON LINE (red) button to save the new top-of-form setting and set the printer back online.

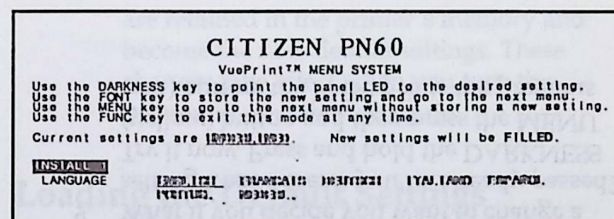
If you want to reset the top-of-form to the factory setting ($\frac{20}{60}$ " or $\frac{1}{3}$ "), retract the paper to

- With paper already loaded and the printer online, press the ON LINE (red) and POWER (black) buttons for 2 to 3 seconds. The ON L and PWR lights blink.

32

- Press the MENU (red) button for 2 to 3 seconds to enter the VuePrint menu. The three middle lights flash while the PN60 prints the VuePrint menu instructions, followed by the options for the first menu. It also underlines the current setting.

VuePrint changes are made using the buttons on the PN60's control panel. These options are printed at the top of the VuePrint page. This section briefly describes how to change the default font, which is typical of the type of change you might make. (You'll also have some fun moving around in VuePrint to familiarize yourself with most of its functions.)



- Press the MENU (red) button to move to the next menu, which is EMULATION. The PN60 prints the menu and then advances the paper so you can see the menu settings.
- Press the MENU (red) button again to move to the next menu, which is FONT.
- Each setting in the current menu corresponds to a light on the control panel.

33

- For example, if the first setting is selected, the ON L light is on; if the second setting is selected, the P.E. light is on; and so on. Also, when you look at the printout, you'll see that the current default setting is underlined.
6. To change the FONT setting to COURIER for example, press the DARKNESS (yellow) button twice until the R.E. light is on, which corresponds to the COURIER setting.
 7. Press the FONT (blue) button. The printer "fills in" the new setting (prints it in solid characters) and advances to the next menu, which is in this case PITCH.
 8. Suppose you move the setting and then change your mind and don't want to save the setting? Just press the MENU (red) button (instead of pressing the FONT (blue) button). The next menu is printed. Try it now by pressing the DARKNESS button until the CRG light is on (PROPORTIONAL pitch). Now press the MENU (red) button; the PN60 prints the next menu, which is FONT LOCK.
 9. What if you decide you want to change a setting from a menu you've already passed? Try it now. Press and hold the DARKNESS (yellow) button and then press the MENU (red) button; the PN60 prints the previous

menu, PITCH. Press them again to return to the FONT menu.

10. Since we're at the FONT menu, let's change the default setting back to ROMAN. The ON L light should already be on, which corresponds to the ROMAN setting. Press the FONT (blue) button to save this setting. ROMAN is filled in and the PITCH menu is printed.
11. Well, that's enough excitement for one day! Let's finish by exiting the VuePrint system. To do this, press the FUNC. (black) button. The paper is ejected from the printer. The printer also exits VuePrint if you press MENU (red) or FONT (blue) at the last VuePrint menu item. All settings you saved

are retained in the printer's memory and become the new default settings. These changes take effect when you turn the printer off, and then on again.

Loading the Default Settings

After you have made changes to the VuePrint menu, the new defaults will take effect the next time you turn the printer power off and on. However, to use the new settings immediately without turning the printer off, do the following:

1. With paper already loaded, press the ON LINE (red) and POWER (black) buttons for 2 to 3 seconds to enter the VuePrint

menu system. The ON L and PWR lights blink.

2. Press the MENU (red) and DARKNESS (yellow) buttons for 2 to 3 seconds. The P.E. and CRG lights blink 3 times to confirm that the settings are loaded.
3. Press the FUNC. (black) button to exit the Function mode. The printer is now online with the new settings loaded.



If your software sends commands that override the VuePrint settings, you can restore the settings by: 1) sending the master reset command (Esc @) from your software, 2) completing the procedure described above, or 3) turning the printer power off and on again.

Printing a Default Settings Report

The PN60 lets you print a report of the current default settings. Menus are printed down the page. Settings within each menu are printed across the page. Current default settings are underlined. You can print the default settings report in one of two ways:

36

- ❑ With paper already loaded, press the RIBBON (blue) button while turning on the printer. The PN60 prints the default settings report.
- ❑ With paper already loaded and the printer online, press the ON LINE (red) and POWER (black) buttons for 2 to 3 seconds. The ON L and PWR lights blink. Then, press the DARKNESS (yellow) and FONT (blue) buttons for 2 to 3 seconds. The three middle lights blink while the PN60 prints the default settings report. When it's finished, load more paper and press the FUNC. (black) button, then the ON LINE (red) button, to set the printer back online.

CITIZEN PN60									
Default Setting Report									
Default settings are <u>FILLED</u> .									
LANGUAGE									
LANGUAGE	ENGLISH	FRANCAIS	DEUTSCH	ITALIANO	ESPAÑOL				
EMULATION	EPSON	IBM	ESC	AUTO					
FONT									
FONT	ROMAN	CARD	CONDENSE	SCRIPT	CRATCH				
PITCH	10 CPT	12 CPT	15 CPT	PROPORTIONAL					
FONT LOCK	OFF	ON							
PALETTE									
COMPRESS	OFF	QUANTER	LANDSCAPE						
LINE SPACING	0 LPI	0 LPI	0 LPI	0 LPI	0.5 LPI				
FORM LENGTH	5 INCH	0 INCH	7 INCH	0 INCH	0.5 INCH				
MIRROR PRINT	11 LETTER	11.00 A4	12 INCH	14 LEGAL					
CHARACTER									
SLASH ZERO	OFF	ON							
CHARACTER SET	ITALICS	GRAPHICS							
INTL CHAR SET	U.S.A.	FRANCE	GERMANY	U.K.	DISCARD1				
	GERMANY	ITALY	SPAIN 1	JAPAN	DISCARD2				
	DISCARD2	SPAIN 2	LATIN AM	LEON	DISCARD3				
	HEBREW	TURKEY							
CODE PAGE	U.S.A.	WEST	HEBREW	CANADA	HEBREW				
	DISCARD4	TURKEY	ICELAND	WELSH	DISCARD5				
	HEBREW	WELSH							
EMULATION									
AUTO LF	OFF	ON							
SPACE SKIP	DISABLE	ENABLE	10 min.	DISABLE					
POWER OFF	3 min.	0 min.							
STYLING									
STYLING	AUTO	DISCARD	ENABLE	2400	1200				
BAUD RATE	1200	9600							
PROTOCOL	ASCII	HEX							

VuePrint Menu Settings

The following is a complete description of the PN60's VuePrint menu options:

Menu Setting	Description
LANGUAGE	Selects the language the PN60 uses to print instructions when using the VuePrint menu, including English, French, German, Italian, Spanish, Portuguese and Dutch.
EMULATION	Selects Epson LQ-860 commands or IBM Proprinter X24E commands. Be sure to select the same emulation here as in your software. Note: Citizen PN60 commands are supported in both Epson and IBM emulations.

Menu Setting	Description
FONT	Selects Roman, Sans Serif, Courier, Script or Orator.
PITCH	Selects 10 cpi, 12 cpi, 15 cpi or Proportional.
FONT LOCK	Turns font lock on or off. When FONT LOCK is on, font-selection commands sent by your software are ignored; the printer uses the font selected with the control panel.
COMPRESS	Turns quarter-page or landscape printing on or off. Quarter-page printing allows you to print two pages on a single sheet of paper by reducing all printing to one-fourth its normal size. Landscape printing prints two landscape pages vertically on the page.

Menu Setting	Description
LINE SPACING	Selects 6 lines per inch (standard typewriter spacing) or 8 lines per inch. You can specify other spacing values with software commands.
FORM LENGTH	Selects among several standard form lengths. Set this to match your paper size.
MIRROR PRINT	Turns mirror print on or off. When mirror print is on, text appears backwards and images are flipped horizontally. This setting is useful when you want to flip a graphic and your software is unable to do this.
SLASH ZERO	When slash zero is on, the printer adds a slash through zeros so they are easily distinguished from the letter O.
CHARACTER SET	Selects one the available character sets.

Menu Setting	Description
INTERNATIONAL CHARACTER SET (Epson only)	Selects one of the available international character sets.
CODE PAGE (IBM only)	Selects code pages, a method that DOS computers use to display and print international characters.
AUTO LF	Automatically advances the paper one line after each carriage return command.

Menu Setting	Description
SPACE SKIP	In order to conserve ribbon use, space skip is determined as follows: <i>If SPACE SKIP is disabled</i> , the print cartridge is moved as follows: if the space length < 4 inches, the space is not skipped; if the space length is ≥ 4 inches, the space is skipped. <i>If SPACE SKIP is enabled</i> , the print cartridge is moved as follows: if the space length is < .5 inch, the space is not skipped; if it is ≥ .5 inch, the space is skipped.
POWER OFF	Selects the amount of time before which the printer automatically turns off. Options include 3, 4, 5, 6, or 8 minutes, or Disable which disables the power-off feature entirely. If the international power adapter is being used, the printer ignores this setting.

Menu Setting	Description
STYLEWRITER	Disables or enables the StyleWriter emulation, or sets it to automatic emulation sensing. This item should be set to Auto most of the time. The Enable or Disable StyleWriter options are important only if there is a problem with the automatic emulation sensing. The Citizen Macintosh driver is designed to work with either Auto or Disable.
BAUD RATE	Sets the baud rate for the RS232-C serial interface to 19200, 9600 (default), 4800, 2400 or 1200.
PROTOCOL	Sets the protocol for the RS232-C serial interface to XON/XOFF (default) or DTR.

Appendix A

Options

"A variety of specially-designed options make your PN60 more portable, and you more productive!"

This chapter describes each of the PN60 options. You'll also find information about ordering PN60 accessories and supplies.

You'll find these optional accessories available at your nearest authorized Citizen dealer:

- ☐ Rechargeable battery
- ☐ Color print cartridge
- ☐ Macintosh connectivity kit
- ☐ Serial interface connectivity kit
- ☐ Car power adapter

Battery

The PN60 can be powered entirely by its optional battery. In this section, we'll explain how to install the battery, how to check the battery's charge level, how to recharge the battery.



Be sure to observe these cautions when handling the battery:

- ☐ Do not disassemble the battery pack.
- ☐ Do not dispose of the battery in a fire; it might explode.
- ☐ Do not touch the battery contacts.

Attaching the Battery

The battery attaches to the bottom of the printer. Its footprint is the same as the printer, and it's about 1/2" thick. Follow these steps to attach it:

1. Turn off the printer.
2. Position the printer as shown in the illustration. Slide the small switch on the bottom of the printer to the "battery" position (you'll see a small battery icon near the switch). Moving this switch exposes the metal contact points for the battery to operate properly.
3. Remove the packaging from the PN60 battery. Position it as shown in the illustration and attach it to the bottom of the

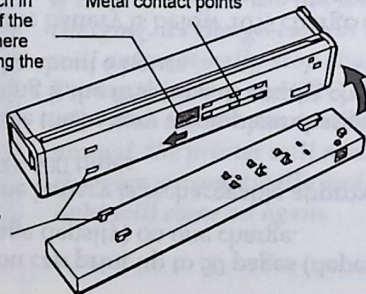
printer by sliding the battery towards the paper release lever.

4. Set the printer back to its normal operating position.

Slide this switch in the direction of the arrow shown here before attaching the battery.

Metal contact points

Place the tabs on the battery into the slots on the printer.



Charge the battery completely before using it for the first time. Plug the international power adapter into the printer and into a power source. The battery will begin charging immediately and will take about 6 hours to fully charge.

Recharging the Battery

The PN60's unique battery is fully rechargeable and designed for long, exemplary performance. It allows your printer to be completely portable and still weigh less than two pounds. Check out these battery "facts:"

- ❑ You can print up to 50 pages (depending on page density) on one charge.
- ❑ One battery is rechargeable approximately 400–600 times.
- ❑ Give the battery a complete charge before using it the first time. If empty, charging will take about 6 hours.
- ❑ If the battery is below 10% charge capacity, the battery charge mode is automatically turned on and the CRG light comes on. The CRG light will not come on if the battery is fully charged or if no battery is installed.
- ❑ When battery capacity falls below 20%, the CRG light blinks. If you are printing when this happens, the best action is to plug in the international power adapter and continue printing. If that is not possible, press the ON LINE (red) button to override the alarm condition and continue printing. The battery is good for approximately two more pages.
- ❑ Using the international power adapter, you can recharge the battery and continue working at the same time. The charging time is slightly longer if you use the printer while charging. You will know the battery is charging anytime the CRG light on the control panel is on.

- ❑ The PN60 international power adapter will prevent the battery from overcharging, so be sure to use *only* the PN60 adapter.
- ❑ You'll get the quickest recharge times if you recharge the battery before it is fully discharged.



If the printer gets too hot while charging, its charge-control circuitry will automatically stop charging. During this time, the CRG light goes off. When the temperature returns to normal, the printer will resume charging automatically and the CRG light will come on again.

Checking the Battery Charge Level

It is a good practice to check the battery charge level periodically or before a print job. You can check it with or without paper loaded, but not if the international power adapter is connected.

1. Turn the printer on and set it offline.
2. Press the POWER (black) and LF/EJECT (yellow) buttons. The battery capacity is shown by the 5 lights on the control panel:

	ON L	P.E.	R.E.	CRG	PWR
80% - 100%	●	●	●	●	●
60% - 79%	●	●	●	●	○
40% - 59%	●	●	●	○	○
20% - 39%	●	●	○	○	○
0% - 19%	●	○	○	○	○

Manually Charging the Battery

You can charge the battery at any time, using two different methods of charging.

1. Set the printer offline.
2. Press the POWER (black) and LF/EJECT (yellow) buttons to perform a standard charge.
3. The CRG light comes on to indicate it's charging. To stop recharging the battery, press the POWER (black) and LF/EJECT (yellow) buttons. The CRG light goes off.

Using the Power-Saving Mode

The PN60 has an automatic power-saving mode which is designed to save battery energy. It does *not* work when the printer is connected to the international power adapter.

The automatic power off mode gives maximum service life to a battery charge. The automatic power off mode waits for three or more minutes (you can change the waiting interval in the VuePrint menu) before turning the printer off.

If you do not activate any printer functions or send any data to the printer within that time, the automatic power off mode turns off the printer. To wake up the PN60, turn the power switch on again.

Use the VuePrint menu described in Chapter 6 to change the amount of time the printer waits before turning itself off.

Color Print Cartridge

The Citizen PN60 prints color images on transparencies and other media, adding impact and memorability to that important business presentation, meeting or report.

Printing in color can be accomplished by using a color print cartridge and installing it in place of your regular black print cartridge. You'll also need to tell your software program that you are using color.

Chapter 5 describes in detail installing the cartridge and printing in color.

PN60 Connectivity Kits

Along with its standard connections, the PN60 offers two optional connectivity kits, depending on the type of computer you are using:

Computer platform	Interface used	Connectivity kit
PC and compatibles	Parallel	Standard with PN60
PC and compatibles	RS-232C serial	Serial interface kit
Subnotebook PCs and PDAs	RS-232C serial	Serial interface kit
Macintosh and Newton	RS-422 serial	Macintosh kit

Macintosh Connectivity Kit

Your PN60 can be used with your Powerbook or Macintosh computer if you have the Macintosh connectivity kit from Citizen, which includes:

- ❑ A Macintosh printer cable
- ❑ The Citizen printer driver which lets you print in both color and laser quality black (you can also use StyleWriter or StyleWriter II drivers to print in laser quality black)
- ❑ The *PN60 User's Guide, Macintosh version*

See "Ordering Accessories and Supplies" at the end of this chapter for ordering information.

Connecting Your Macintosh

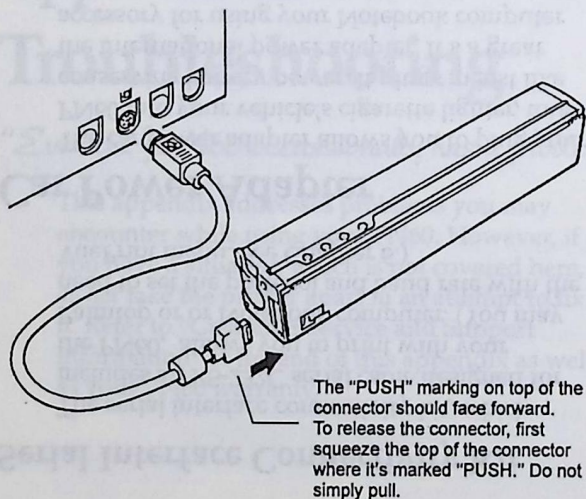
Follow these steps to connect the Macintosh printer cable to your Macintosh, Powerbook, Duo or desktop computer:

1. Turn off your printer and computer.
2. Attach the printer end of the cable to the cable connector on the left end of your printer. The connector is keyed so it fits only one way. Be sure to push the cable connector all the way in.
3. Fit the other end of the cable onto the printer or modem port of your Macintosh.

Selecting a Printer Driver for Your Macintosh

Printing on a Mac is easy since the PN60 works with StyleWriter, StyleWriter II, Citizen PN60 and Citizen Notebook Printer II printer drivers. The Citizen PN60 printer driver comes with the Macintosh connectivity kit and allows you to print in color.

If you need help using your PN60 with your Macintosh, refer to the *PN60 User's Guide, Macintosh version*, that comes with the Macintosh connectivity kit.



Serial Interface Connectivity Kit

The serial interface connectivity kit, which includes an RS-232C serial cable designed for the PN60, allows you to print with your Palmtop or Notebook computer. (You may need to set the protocol and baud rate with the VuePrint menu. See Chapter 6.)

Car Power Adapter

The car power adapter allows you to plug your PN60 into your vehicle's cigarette lighter, thus conserving battery power. It plugs in just like the international power adapter. It's a great accessory for using your Notebook computer and your PN60 "on the road!"

Ordering Accessories and Supplies

Accessories and supplies such as print cartridges are available through your local Citizen dealer. For added convenience, and for parts requirements when out of warranty, you may order these items from National Parts Depot at (800) 524-8338 between the hours of 8:00 AM and 7:00 PM (EST) Monday through Friday. In Canada, call C.N.S. Canada at (416) 338-3044 between the hours of 8:30 AM and 5:00 PM (EST) Monday through Friday. In Mexico, call City Data S.A. de C.V. at (91) (5) 264-3894 between the hours of 8:30 AM and 6:00 PM (Mexico City) Monday through Friday.

Appendix B

Troubleshooting

"Even the PN60 occasionally has a problem. Here's the solution."

This appendix addresses problems you may encounter while using your PN60. However, if you have a situation which is not covered here, *do not* take the printer apart in an attempt to fix it. Refer to "Customer Service and Support Information" at the end of this appendix as well as your PN60 warranty.

Power Problems

Problem: No power to the printer.

- ✓ Press the POWER (black) button again. If the printer is running on battery, the automatic power off feature may have turned the printer off to save battery capacity.

- ✓ Recharge or replace the battery or plug in the international power adapter. If the battery is low, the control panel's CRG light blinks.
- ✓ If you're using the international power adapter, check to be sure it is securely plugged into the PN60 and a wall outlet, and that the wall outlet is working.

Problem: The printer stops printing mid-job.

- ✓ Recharge the battery or plug in the international power adapter. This situation can occur when the low battery signal has been manually overridden and forgotten. The PN60 allows you to continue printing after

the low battery alarm sounds because the battery can print approximately two more pages.

- ✓ Check to see if the print cartridge is used up (the R.E. light blinks) and replace it with a new one if necessary.

Problem: The printer won't print.

- ✓ Make sure the printer is online; the ON L light should be on. If it's not, press the ON LINE (red) button to set the printer online.
- ✓ Confirm that the PN60 is attached to the computer with the printer cable provided.

- ✓ Make sure your software is printing to the correct printer port.
- ✓ Load paper if necessary.
- ✓ Check the print cartridge. Remove and reinstall it or install a new one.

- ✓ Check the leading edge of the paper to be sure the corners are smooth and unwrinkled.
- ✓ Clean the paper feed rollers inside the printer of accumulated paper dust with a soft cotton swab.

Paper Feeding Problems

Problem: Paper does not feed properly.

- ✓ Turn the printer on if it's off.
- ✓ Check that the printer is online; the ON L light should be on.
- ✓ Be sure the paper release lever is set to the rear (•|•) position.

Problem: Paper is jammed in the printer.

- ✓ Turn the printer off. Set the paper release lever to the forward (• | •) position. Pull the paper back through the printer, if possible. If you can't remove it, open the top cover by lifting the front edge of cover so that you can see the paper. To do this, pull on the two ends of the cover until it pops open. Pull the sheet out of the printer. Close the cover and set the

paper release lever back to the rear (•|•) position.

- ✓ Paper end sensor errors may arise if you use the printer on an uneven surface. As much as possible, please use the printer on a flat surface.

Problem: Paper will not advance.

- ✓ Set the printer offline by pressing the ON LINE (red) button. Press the LF/EJECT (yellow) button to eject the paper.

Problem: Paper curls.

- ✓ Use a fresh package of paper.
- ✓ If possible, use paper with grain running in the long direction.

- ✓ Use paper with a lower moisture content or higher weight. See the paper specifications in Appendix C.

Print Quality Problems

Problem: Print is too light/dark.

- ✓ Adjust the print darkness, using the control panel as described in Chapter 6. Papers accept ink differently depending on their moisture content, surface texture and other factors. Adjust the ink intensity to your liking.

Problem: Print is too light.

- ✓ Be sure the print cartridge is correctly installed as described in Chapter 5.

54

Problem: Letters are poorly formed.

- ✓ Try a new package of paper or experiment with a different type of paper. Standard copier paper (which has a low moisture content) gives reliable results.
- ✓ Replace the print cartridge as described in Chapter 5.
- ✓ Clean the platen (inside the printer, below the print carriage) with alcohol and a cotton swab.

Problem: Unexpected characters appear.

- ✓ Use the default settings report to check the emulation set on the printer (Epson or IBM) against the

printer driver selected with your software. They must match. Your software program should be communicating with a Citizen PN60, PN48, Notebook Printer II, GSX-series, Epson LQ-860 or IBM Proprinter X24E printer. Refer to the table in Chapter 3 for additional help.

Battery Problems

Problem: The CRG (charge) light does not come on when you try to charge the battery.

- ✓ Attach the international power adapter to the printer. Check to be sure the other end is plugged into a power source.

55

- ✓ The battery capacity may not be low enough (20%) for automatic charging to be activated. However, you can still turn charging on if you wish. With the printer offline, press the POWER (black) and LF/EJECT (yellow) buttons. The CRG light comes on.

To stop recharging the battery, press the POWER (black) and LF/EJECT (yellow) buttons. The CRG light goes off.

- ✓ Check the battery; the charge light will not work if the battery is not installed correctly. See Appendix A.

- ✓ The charge light turns off automatically when the battery is fully charged.

Problem: The battery no longer holds a charge.

- ✓ It's time to replace the battery, as long as you're sure you're recharging properly. As a milestone for how long your battery lasts, note that 1) You can print up to 50 pages (depending on page density) on one charge; 2) One battery is rechargeable approximately 400–600 times.

Printing Test Images

Several factory-set test prints in the form of reports and printouts offer a variety of information about your printer:

- ❑ The default settings report shows you the current printer settings made with the VuePrint menu
- ❑ The font printout prints samples of the resident fonts in your PN60
- ❑ The demo printout shows you a variety of the PN60's features and capabilities
- ❑ The hex dump mode provides a hexadecimal printout of the information you subsequently send to the printer

The procedures to produce these tests are described in the rest of this chapter.

Default Settings Report

This report shows you the current printer settings made with the VuePrint menu.

1. Turn on the printer and load paper.
2. Turn off the printer.
3. Press and hold the RIBBON (blue) button while you turn on the printer.
4. Press the ON LINE (red) button once to interrupt the test print; press it again to resume printing. When the report is finished, the paper is ejected from the printer.
5. Turn off the printer to end the test print.

CITIZEN PN60					
Default Setting Report					
Default settings are Filled.					
LANGUAGE	ENGLISH	FRANCAIS	DEUTSCH	ITALIANO	ESPAÑOL
EMULATION	PORTUG. EPSON	ROMAN	12 CPI	15 CPI	AUTO
FONT	ROMAN	SANS SERIF	COURIER	SCRIPT	ORATOR
PITCH	10 CPI	12 CPI	15 CPI	18 CPI	PROPORTIONAL
FONT LOCK	OFF	ON	ON	ON	ON
COMPRESSION	OFF	ON	ON	ON	ON
LINE SPACING	6 LPI	8 LPI	10 LPI	12 LPI	14 LPI
FORM LENGTH	5 INCH	7 INCH	9 INCH	11 INCH	13 INCH
MIRROR PRINT	OFF	ON	ON	ON	ON
SLASH ZERO	OFF	ON	ON	ON	ON
CHARACTER SET	U.S.A.	U.K.	GERMANY	SPAIN 1	SPAIN 2
INTL CHAR SET	U.S.A.	U.K.	GERMANY	SPAIN 1	SPAIN 2
CODE PAGE	U.S.A.	U.K.	GERMANY	SPAIN 1	SPAIN 2
GRAPHICS	OFF	ON	ON	ON	ON
AUTO LF	OFF	ON	ON	ON	ON
SPACE SKIP	DISABLE	ON	ON	ON	ON
POWER OFF	2 min.	5 min.	10 min.	15 min.	20 min.
STYLING	AUTO	DISABLE	ON	ON	ON
BAUD RATE	1200	2400	4800	9600	19200
PROTOCOL	XON/XOFF	RTS/CTS	CTS/DSR	CTS/DSR	CTS/DSR

Font Printout

This printout shows samples of the resident fonts in your PN60.

1. Turn on the printer and load paper.
2. Turn off the printer.
3. Press and hold the ON LINE (red) and LF/EJECT (yellow) buttons while you turn on the printer.
4. Press the ON LINE (red) button once to interrupt the test print; press it again to resume printing. When the printout is finished, the paper is ejected from the printer.
5. Turn off the printer to end the test print.

CITIZEN PN60	
ROMAN-STYLE	123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc 123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc
COURIER-STYLE	123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc 123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc
SANSERIF-STYLE	123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc 123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc
SCRIPT-STYLE	123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc 123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc
ORATOR-STYLE	123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc 123456789:;<=>789ABCDEF GHIJKLMNOPQRSTUVWXYZ{ }~"abc defghijklmnopqrstuvwxyz{ }~"abc

Demo Printout

This printout shows you a variety of the PN60's features and capabilities.

1. Turn on the printer and load paper.
2. Turn off the printer.
3. Press and hold the LF/EJECT (yellow) button while you turn on the printer.
4. Press the ON LINE (red) button once to interrupt the test print; press it again to resume printing. When the printout is finished, the paper is ejected from the printer.
5. Turn off the printer to end the test print.

Hex Dump Mode

Hex dumps are used for debugging programs. To run a hex dump:

1. Turn on the printer and load paper.
2. Turn off the printer.
3. Press and hold the ON LINE (red) button while turning on the printer. "Hexadecimal dump" is printed at the top of the paper.
4. Send a print command from your computer.
5. To stop the hex dump, turn off the printer.

60

Service and Support Information

Citizen America Corporation maintains a highly-qualified staff of service professionals to see to your service and support needs. Should you ever require service or support, please contact us using the telephone numbers indicated in the following paragraphs, or write to: **Citizen America Corporation, P.O. Box 4003, Santa Monica, CA 90411-4003.**

Should you require Citizen customer support in Europe, please contact Citizen Europe Limited Customer Service at (44) 0753-584111. In Mexico, please contact City Data S.A. de C.V. in Mexico City at (91) (5) 264-3894 or (91) (5) 584-6980.

Repair Service

Citizen offers a variety of repair support programs in order to meet your service needs. Under warranty, utilize our standard warranty exchange service, or enhance and extend your warranty through the purchase of a Citizen service contract. For post warranty repairs, choose from flat rate exchange service or depot repair on a time and materials basis. For immediate service support, or for more information, call Citizen Customer Service at (310) 453-0614 8:00 AM to 4:00 PM (PST) Monday through Friday.

61

Technical Support

For assistance with setup and operation beyond what your dealer can provide, please call Citizen Technical Support at (310) 453-0614 between the hours of 8:00 AM and 4:00 PM (PST) Monday through Friday.

Technical and service information, product specifications and more are also available from Citizen's electronic Bulletin Board System (BBS). Free access is available 24 hours a day at the following numbers (via modem): (310) 453-7564 (300/1200/2400, 8N1) or (310) 829-3740 (9600/14400, V.32bis, 8N1).

Appendix C Specifications

"Complete specifications for the Φ N60 provide the facts you need to impress your friends."

Dimensions	Width: 10.0 inches Depth: 1.9 inches Height: 2.0 inches	Interface	Parallel, RS-232C serial and RS422 serial (Apple)
Weight	1.1 lbs. (without battery) 1.7 lbs. (with battery)	Emulations	Parallel and RS-232C serial interfaces: Epson LQ-860, IBM Proprinter X24E RS422 serial interface: StyleWriter, StyleWriter II
Printing method	Laser-quality 60-element Thermal Fusion technology	Memory	64 KB (input buffer) 128 characters (Epson download)

Printing speed	10 cpi	105 cps
	12 cpi	126 cps
	15 cpi	157 cps
	Throughput	25 lines/minute
Temperature	Printing: 41° to 95°F (black ribbon);	
	59° to 86°F (color ribbon)	
	Operating: 41° to 104°F	
	Storage: -13° to 149°F	
Relative humidity	Printing: 30% to 80%	
	Operating: 10% to 90%	
	Storage: 5% to 85%	
Noise	46 dBA	

Standards

UL1950, Pollution degree 2
CSA C22.2 No. 234 Level 3,
Pollution degree 2
IEC950/EN60950, Pollution
degree 2

Input

100–240 V, 50–60 Hz

Output

7.8–8.0 V, 0–3.5 A (typical 2.0 A)

Leakage

Less than 0.75 mA

Safety

Equipped with short circuit and overcurrent protection devices. Overload circuitry is activated at current levels in excess of 4.5 A. After an overload condition, the protection devices automatically reset 2 minutes after input voltage has been removed.

International Power Adapter

Paper

Feeding	Single sheet, friction
Size	Length: 3.5–15.1 inches
	Width: 3.5–8.5 inches
	Weight: 16–27 lb.
Transparencies	Use high-quality transparencies designed for use with copiers and laser printers
Labels	Recommended labels are Avery Laser Labels or equivalent

Environment

Operating: 41° to 95° F
Storage (96 hours): -13° to 122° F
Storage (1 month): 41° to 113° F
Storage (1 year): 41° to 95° F

Parallel Interface

Interface

Centronics-compatible, 7 or 8 bit

Connector

AMP 178234-4, 26-pin

Cable

Length: 36 inches
Extensions: Contact your Citizen dealer for a desktop cable adapter, or use an extension cable with a 25-pin male connector on one end and a 25-pin female connector on the other (all 25 pins must be connected)

Print Cartridge

Types	Black
	Color (optional)

Pin assignments	Printer (26 pin)	Computer (25 pin)	Signal
	11	1	STROBE
	21	2	Data 1
	22	3	Data 2
	23	4	Data 3
	24	5	Data 4
	25	6	Data 5
	26	7	Data 6
	13	8	Data 7
	12	9	Data 8
	6	10	ACK
	7	11	BUSY
	5	12	PE
	4	13	SELECT
	9	14	AUTO FEED XT
	3	15	FAULT
	10	16	INIT

Pin assignments	Printer (26 pin)	Computer (25 pin)	Signal
	8	17	SELECT IN
	2, 1	18, 19, 20,	GND
		21, 22, 23,	
		24, 25	

RS232-C Serial Interface

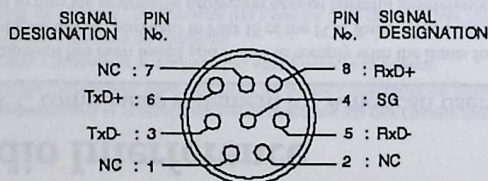
Interface	RS-232C with DB-9S connector
Settings	Xon/Xoff (default) or DTR protocol; 19200, 9600 (default), 4800, 2400, 1200 baud; 8 data bits; 1 start bit; 1 stop bit; no parity. Protocol and baud rate can be set with PN60's VuePrint menu.

Pin assignments	Printer (26 pin)	Computer (9 pin)
	15	2
	14	3
	18	4
	1, 2	5
	20	7

Settings	57,600 baud; 8 data bits; 1 start bit; 1 stop bit; no parity; Xon/Xoff (Other settings are available only when the VuePrint STYLEWRITER setting is set to DISABLE. You must select 57600 baud and Xon/Xoff protocol to use the Citizen printer driver.)
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RS422 Serial Interface (Apple)

Interface RS422 with 8-pin DIN connector



Pin assignments	Printer (26 pin)	Computer (8-pin)
	20	1
	18	2
	15	3
	14	5
	17	6
	16	8

Radio Interference

FCC compliance statement for American users

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- Use attached shielded cables to connect this device to computers.

- Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate this device.

EMI compliance statement for Canadian users

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications. This equipment is designed to provide reasonable protection against such interference in a residential installation. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the computer with respect to the receiver
- Move the computer into a different outlet so that computer and receiver are on different branch circuits

Etat de conformite EMI a l'usage des utilisateurs Canadiens

Cet équipement produit et utilise l'énergie à radiofréquences et s'il n'est pas installé et utilisé correctement, c'est à dire en accord strict avec les instructions du fabricant, il risque de provoquer des interférences avec la réception de la radio et de la télévision. Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada. Cet équipement est conçu pour fournir une protection satisfaisante contre de telles interférences dans une installation résidentielle. Cependant, il n'y a pas de garantie contre les interférences avec les réceptions radio ou télévision, provoquées par la mise en et hors circuit de l'équipement; aussi, il est demandé à l'utilisateur d'essayer de corriger l'interférence par l'une ou plus des mesures suivantes:

- Réorienter l'antenne de réception.
- Installer l'ordinateur autre part, par égard pour le récepteur.
- Brancher l'ordinateur dans une prise de courant différente de façon à ce que l'ordinateur et le récepteur soient branchés sur des circuits différents.

Index

AC adapter

See International power adapter

Authorized Service Center, 61

Auto LF, 39

Battery, 42, 65

attaching, 42

charging, 43

power-saving mode, 46

Baud rate, 40

BBS, viii, 14, 62

Buffer memory, 63

Bulletin board, viii, 62

Car power adapter, 50

Character sets, 39

Code page, 39

Color, 25

Commercial software, 13

Control panel, 9

adjusting the top margin, 31

basic operations, 11

darkness setting, 25, 29

offline mode, 11

online mode, 10

VuePrint menu, 38

Darkness setting, 25, 29

Default setting report, 36

Dimensions, 63

Emulation, 38

Envelopes, 21

Epson emulation, 38

Fonts, 38

Foreign-language characters

See Code page, International characters

Form length, 39

IBM emulation, 38

Interface

- connecting the printer cable, 3
- Interface cable, 66
- International characters, 39
- International power adapter, 4, 44, 64
- Labels, 21, 65
- Line spacing, 39
- Loading paper, 6
- Macintosh
 - connecting, 4
 - connectivity kit, 48
- Microsoft Windows, 14
- Offline, 11
- Online, 10
- Options
 - Battery, 42
 - car power adapter, 50
 - color, 25
- Package contents, 1
- Paper, 65
 - adjusting position, 22
 - envelopes, 21
 - labels, 21
 - loading, 6

- transparencies, 21
- types, 19
- using, 19
- using letterhead, 20
- Parallel interface, 65
- Parts, viii
 - ordering, 50
- Power off, 40
- Print cartridge, 23–24, 65
 - color, 25
 - installing, 8
 - replacing, 24
- Print darkness
 - See setting
- Printable area, 22
- Printer cable, 3
- Printer driver, 14
- Printer drivers, 16
- Printer settings
 - using the VuePrint menu, 29
- Problems
 - See troubleshooting
- Protocol, 40

- Quarter-page printing, 38
- Reset, 36
- Safety instructions, 1, 42
- Serial interface
 - baud rate setting, 40
 - connectivity kit, 50
 - protocol setting, 40
- Service, 61
- Setup, 1
 - software, 13, 16
- Slashed zero, 39
- Software, 13, 16
- Space skip, 40
- Specifications, 63
- Speed
 - printing, 64
- Technical support, viii, 62
- Test prints, 57
- Top margin
 - adjusting, 31
- Top-of-form position, 7
- Transparencies, 21, 65

- Troubleshooting, 51, 68–69
 - test prints, 57
- VuePrint menu, 29, 38
- Warranty, 74
- Windows driver, 14
- Zero, slashed, 39

What is covered and for how long:

Citizen America Corporation ("Citizen") warrants that the product with which this warranty statement is enclosed is free from defects by reason of improper workmanship and/or material and will operate as intended by Citizen for a period of two years. This warranty period commences on the date of original purchase for the purpose other than resale and applies only if such original purchase occurs in the United States or Canada.

How to exercise this warranty:

To obtain service during the warranty period, please present your Citizen product, properly packaged in its original container or an equivalent, to Citizen, Citizen's designated agent, or your Citizen Dealer, as directed by Citizen. Any postage, insurance and shipping costs incurred presenting or sending your Citizen product for service are your responsibility.

What Citizen will do to correct problems:

Within the United States or Canada, Citizen will, at its option, repair or replace, on an exchange basis, the defective product

without charge for parts and labor. Citizen may use remanufactured, refurbished, or used parts and components in making warranty repairs.

Should Citizen determine that the product is not defective or is not covered by the warranty or is outside of the warranty term, the product shall be returned to you at your expense without being repaired or replaced.

Your original purchase receipt or other satisfactory proof of the date of the original retail purchase of your Citizen product must be provided to obtain service under this warranty.

Warranty limitations and other information:

This warranty applies only if your Citizen product fails to function under normal use and within Citizen's specifications described in the User Manual. This warranty does not apply if the Citizen label or logo, or the rating label or serial number, has been removed from your Citizen product, or if, in the sole opinion of Citizen, your Citizen product has been damaged by accident, misuse or neglect, including, but not limited to, breakage resulting from shock, or by improper packing, shipping, modification or servicing, by other

than Citizen or a Service Center authorized by Citizen to perform service on this product, or has not been properly maintained or operated as described in the User Manual.

Neither Citizen nor its affiliates is responsible or liable for any special incidental or consequential loss, inconvenience or damage, whether direct, incidental, consequential or otherwise, and whether known or should have been known to Citizen, resulting from any breach of warranty, the inability to use the product under any legal theory, including loss of profits, goodwill, damage to or replacement of other equipment and property, and personal injury. These warranties and remedies are the sole and exclusive warranties and remedies in connection with the sale and use of this product. No other warranties, oral or written, express or implied, are given. The duration of any implied warranty of merchantability, fitness for a particular purpose, or otherwise, on your Citizen product shall be limited to the duration of the express warranty set forth above.

Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

No Citizen dealer, agent or employee is authorized to make any modification, extension, change or amendment to this warranty.

Who to contact if you have a problem:

You may REQUEST INFORMATION on how to obtain service under this warranty by contacting the Dealer from whom your Citizen product was purchased, or by contacting Citizen America Corp. at the address printed below. DO NOT SEND PRODUCT(S) TO THIS ADDRESS.

Citizen America Corporation
2450 Broadway Avenue
Santa Monica, California 90404
Telephone (310) 453-0614 • FAX (310) 453-2814



Citizen America Corporation
Corporate Office
2450 Broadway, Suite 600
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